
ERL2015
ERL2015
The 56th ICFA Advanced Beam Dynamics Workshop on Energy Recovery Linacs
June 7-12, 2015
Stony Brook University, Stony Brook, New York, USA
Topics
Operational Experience and Commissioning Results
New Applications and Projects
Electron Sources
Machine Optics and Beam Dynamics
Superconducting RF
Beam Instrumentation and Control
For more information please contact: erl2015@bnl.gov
http://www.bnl.gov/erl2015/
International Organizing Committee
S. Belomestnykh, BNL/SBU (Chairman)
S. Benson, JLab
I. Ben-Zvi, BNL/SBU
W. Fischer, BNL
R. Hajima, JAEA
G. Hoffstaetter, Cornell U.
E. Jensen, CERN
H. Kawata, KEK
K.-J. Kim, ANL and U. of Chicago
J. Knobloch, HZB
G. N. Kulipanov, BINP
S. Smith, STFC/DL/ASTeC
Local Organizing Committee
V. Ptitsyn, BNL/SBU (Chairman)
D. Kayran, BNL (IPC Chair)
P. Manning, BNL
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U.S. DEPARTMENT OF ENERGY
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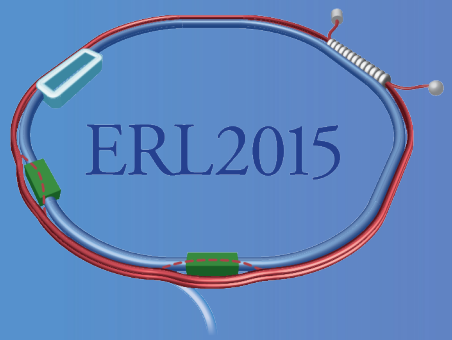


ERL 2015 Workshop Logistics

Sergey Belomestnykh

Collider-Accelerator Department, BNL & Stony Brook University

BROOKHAVEN NATIONAL LABORATORY

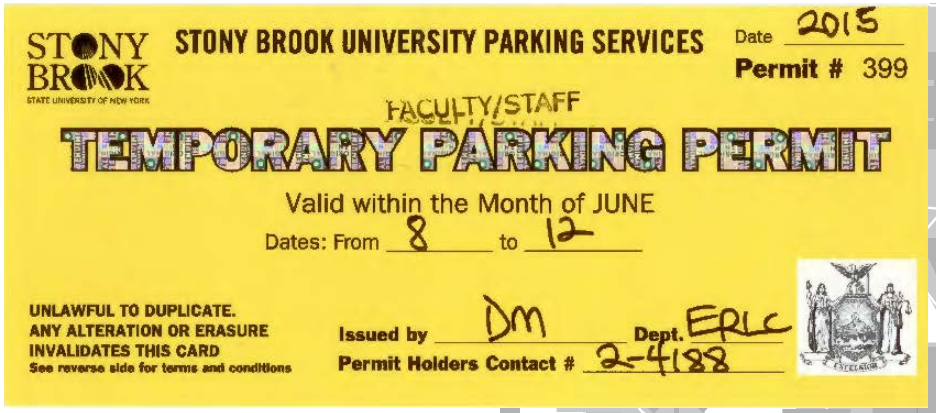
a passion for discovery

U.S. DEPARTMENT OF ENERGY | Office of Science

Stony Brook University • June 8, 2015

Parking

- Those staying at Hilton Garden Inn should park there. The hotel is within short walking distance from Wang Center.
- Others must display a parking permit on the car. Otherwise you will be ticketed.
- There is also paid parking available.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Date 2015

Permit # 399

FACULTY/STAFF

TEMPORARY PARKING PERMIT

Valid within the Month of JUNE

Dates: From 8 to 12

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Permit Holders Contact # 2-4188

Internet & Workshop materials

- **WiFi**: connect to **WolfieNet-Guest**. No authentication is required at this time.
- **Workshop website**: http://www.bnl.gov/erl2015/index.php
- ***Workshop Agenda*** and talks are available at the **Indico site**: https://indico.bnl.gov/conferenceDisplay.py?confId=909
- ***Speakers, please upload you talks to Indico at least one day before your talk.*** You have to be registered and logged in to Indico to be able to upload your files. Please contact the members of LOC if you need help.
- The ***ERL 2015 Workshop Proceedings*** will be published at ***JACoW***. The ***paper submission deadline is June 23, 2015***. It will be handled via JACoW's SPMS as for other conferences. We expect the WG conveners to write summary report papers for the *Proceedings*.

Workshop schedule

Venue: Charles B. Wang Center, Stony Brook University

The LOC office is located in Room 103

- Monday:
  - Plenary sessions in the Theatre.
  - **Group photo before the morning Coffee Break**
- Tuesday:
  - WG organization in the morning (Theatre), then parallel WG sessions in Lecture Halls 1 & 2.
- Wednesday:
  - Parallel WG sessions in Lecture Halls 1 & 2
  - **Banquet in Zodiak Room (Wang Center)**
- Thursday:
  - Parallel WG sessions in the morning
  - Poster session in the Theatre Lobby
  - Closing plenary session after lunch in Theatre
- Friday: **BNL tour**

ERL'15 Synoptic Table

	Sunday- June 7	Monday - June 8	Tuesday - June 9		Wednesday - June 10		Thursday - June 11		Friday - June 12
8:15		Registration / Theater lobby							
8:30		Theater	Theater		Lecture Hall 1	Lecture Hall 2	Lecture Hall 1	Lecture Hall 2	
9:00		Opening S. Belomestnykh (BNL/SBU) Welcome I. Ben-Zvi (BNL)	WG1 Challenges in Guns and Injectors T. Kamps (HZB) & A. Bartnik (Cornell University)		Science Cases on ERL as a Synchrotron Light Source H. Kawata (KEK)	Non-destructive Beam Position Monitoring in Two-Beam Section of ERL T. Obina (KEK)	Satellite Meeting	Diagnostic Test-Beam-Line For The MESA injector I. Alexander (Institute for Nuclear Physics - Mainz U.)	
9:30		Energy Recovery Linacs : Past, Present and Future M. Tigner (Cornell University)	WG2 Beam Dynamics Challenges in ERLs M. Abo-Bakr (HZB) & V. Pitsyn (BNL)		ERL as FEL Driver Y. Jing (BNL)	Beam Current Monitoring with ICT and BPM Electronics I. Pinayev (BNL)		A Fast Rotating Wire Scanner for Use in High Intensity Accelerators S. Full (Cornell U.)	
10:00		ERL-based Electron-Ion Colliders V. Pitsyn (BNL/SBU)	WG3 ERL Instrumentation and Control T. Obina (KEK) & C. Gulliford (Cornell University)		ERL Facility at CERN for Applications E. Jensen (CERN)	Fast Electron Beam and FEL Diagnostics at the ALICE IR-FEL at Daresbury Laboratory F. Jackson (STFC Daresbury)		Detection and Clearing of Trapped Ions in the High Current Cornell Photoinjector S. Full (Cornell U.)	
10:30			WG4 SRF challenges in ERLs H. Sakai (KEK) & E. Jensen (CERN)			Current Measurement and Associated Machine Protection in the ERL at BNL T. Miller (BNL)			
11:00			WG5 Applications V. Litvinenko (BNL/SBU) & O. Bruning (CERN)		An Lepton Energy-recovery-linac Scalable to TeV V. Litvinenko (SBU/BNL)			GaAs Photocathode R&D L. Jones (STFC/Cockcroft)	
11:30		Group photo / Theatre lobby	Discussion			Discussion			
12:00		Coffee Break (15 min)							
12:30		Theater	Lecture Hall 1	Lecture Hall 2	Lecture Hall 1	Lecture Hall 2	Theater Lobby		BNL tour
13:00		The Femto-Science Factory: A Multi-turn ERL Based Light Source T. Atkinson (HZB)	Operational Experience of DC Photoemission Gun at the Compact ERL N. Nishimori (JAEA)	eRHIC: an Efficient Multi-Pass ERL based on FFAG Return Arcs S. Brooks (BNL)	Current Status of the MESA Project R. Heine (Institute for Nuclear Physics - Mainz University)	Cornell's ERL Main Linac Cryomodule: Design, Construction and Results R. Eichhorn (Cornell U.)			
13:30		CERN SC RF and ERL Test Facility Plans D. Pellegrini (CERN)	Development of a 500 kV DC Gun with Narrow Gap M.Yamamoto (KEK)	Correction Methods for Multi-Pass eRHIC Lattice with Large Chromaticity C. Liu (BNL)	Laser Compton Sources Based On Energy Recovery Linacs R. Hajima (JAEA)	Operational Experience of CW SRF Injector and Main Linac Cryomodules at the Compact ERL H. Sakai (KEK)	Poster Session		
14:00		A FFAG-ERL at Cornell, a BNL/Cornell Collaboration G. Hoffstaetter (Cornell U.)	A High-Peak and High-Average Current, Low Emittance, Long Lifetime Electron Source for ERL Applications X. Chang (Far-Tech)	LHeC ERL Design and Beam-Dynamics Issues A. Bogacz (JLab)	Using ERLs for Coherent electron Cooling I. Pinayev (BNL)	The Development of the High Current Superconducting Cavity at IHEP Z. Liu (IHEP)			
14:30		bERLinPro Overview J. Knobloch (HZB)	The Progress of Funneling Gun for eRHIC Injector E. Wang (BNL)	Beam and Polarization Dynamics in Electron FFAG Lattices F. Meot (BNL)	ERL as High Intensity Mono-energetic Gamma-Ray Sources V. Yakimenko (SLAC)	Recent Progress in SRF Acceleration Technology at Peking University S. Huang (Peking U.)			
15:00									
15:30		Lunch on your Own (1 hr 35 min)							
16:00		Theatre	Lecture Hall 1	Lecture Hall 2	Lecture Hall 1	Lecture Hall 2	Theater		
16:30		Successful Result of the Commissioning on cERL in KEK S. Sakanaka (KEK)	High Accuracy Adaptive Laser and Electron Beam Shaping J. M. Maxson (Cornell U.)	Investigations on Transverse Beam Break Up Using a Recirculated Electron Beam T. Kuerzeder (TU Darmstadt)	Ultra-High Flux of X-ray/THz Source based on Asymmetric Dual Axis Energy Recovery Configuration I. Konoplev (JAI, Oxford U.)	SRF Cavities for High Curent ERLs W. Xu (BNL)	WG1 Report Challenges in Guns and Injectors		
17:00	5pm-7pm Check in/ Registration	Cornell Injector Performance A. Bartnik (Cornell University)	Solving the Roughness of Alkali Antimonides J. Smedley (BNL)	HOM-BBU Simulation for KEK ERL Light Source S. Chen (KEK)	ERL for low energy electron cooling at RHIC (LEReC) J. Kewisch (BNL)	Development for Mass Production of Super-conducting Cavity by MHI K. Kanaoka (Mitsubishi Heavy Industries, Ltd.)	WG2 Report Beam Dynamics Challenges in ERLs		
17:30		10 Years of ALICE: From Concept to Operational User Facility P. Williams (ASTeC)	In-situ XRR Analysis on Multialkali Antimonide Photocathode Grown by Sputtering Z. Ding (SBU)	Linear Microbunching Gain Estimation Including CSR and LSC Impedances in Recirculation Machines C-Y. Tsai (Virginia)	An inverse Compton Scattering Beamline for High-energy, Time-resolved X-ray Scattering Studies of Materials G. Hoffstaetter (Cornell U.)	Harmonic Resonant Kicker Design for the MEIC Electron Circular Cooler Ring Y. Huang (IMP)	WG3 Report ERL Instrumentation and Control		
18:00	Welcome Reception Hilton Garden Inn Stony Brook 6:00- 8:00 PM	Design Work of the ERL-FEL as the High Intense EUV Light Source N. Nakamura (KEK)	Characterization of Multi-Alkali antimonide Cathode at Cryogenic Temperature and its Performance in SRF Gun E. Wang (BNL)	Study of CSR Impact on Electron Beam in the JLab ERL C. Hall (Colorado State U.)	Particle Physics Experiments with Cornell's FFAG ERL M. Perelstein (Cornell U.)	Discussion	Coffee Break (15 min)		
18:30			Coffee Break (15 Min)				WG4 Report SRF Challenges in ERLs		
19:00		Theatre	Lecture Hall 1	Lecture Hall 2	Lecture Hall 1	Lecture Hall 2			
19:15		Overview of the State-of-the-Art Laser Techniques for Existing ERLs and the Needs for future High Current Machines S. Zhang (Jlab)	Commissioning Program for the 704 MHz SRF Gun at BNL W. Xu (BNL)	Transverse Emittance Preserving Arc Compressor: Sensitivity to Beam Optics, Charge and Energy S. Di Mitri (Trieste)	The Optics of the eRHIC Low Energy FFAG Cell with Realistic Field Maps N. Tsoupas (BN)	Performance of the Digital LLRF Systems for cERL at KEK F. Qiu (KEK)			
19:30		High-Q R&D for SRF Challenge in ERLs F. Furuta (Cornell University)	Commissioning and First RF Results of the 2nd 3.5 Cell SRF for ELBE A. Arnold (HZDR)	Aspects of eRHIC Longitudinal Dynamics Y. Hao (BNL)	Optics Considerations for the Cornell-BNL FFAG-ERL Test Accelerator C. Mayes (Cornell U.)	Resonance Control for Narrow-Bandwidth, Superconducting Accelerator Applications J. P. Holzbauer (KEK)	WG5 Report Applications		
20:00		Microbunching Instabilities in ERLs - A Blessing or a Curse? A. Meseck (HZB)	First Beam Characterization of SRF Gun II at ELBE with a Cu Photocathode J. Teichert (HZDR)	Discussion	Discussion	Using A 1.3GHz 20kW Solid State Amplifier As RF Power Supply For DC-SRF Photo-injector F. Wang (Peking U.)	Close out talks / Adjourn		
20:30		Status and Commissioning Results of the R&D ERL at BNL D. Kayran (BNL)	Discussion			Discussion			
21:00					Banquet Dinner Charles B. Wang Center (Kenny Room) Starts at 7:00 PM				

LEGEND:

- Plenary Session 1: ERL's Around the Globe
- Plenary Session 2: ERL Test Facility Status
- Plenary Session 3: Operational Experience and Commissioning Results
- Plenary Session 4: WG Presentations
- Plenary Session 5: WG Panels
- Plenary Session 6: WG Reports
- Plenary Session 7: WG Reports and Closout
- WG1 ERL Injectors (Gun/Cathode/Laser)
- WG2 ERL Optics & Beam Dynamics: Collective Effects/Multi-passes/Halo Simulations
- WG3 ERL Beam Instrumentation Control, Beam Loss and Halo Management
- WG4 ERL and SRF, Stability, Synchronization, Special Requirements, HOM Dumping
- WG5 ERL Applications

Last Update (6/3/2015)

ABSTRACT BOOKLET

Stony Brook University | BROOKHAVEN NATIONAL LABORATORY

ICFA

The 56th ICFA Advanced Beam Dynamics Workshop on Energy Recover Linacs

Hosted by Brookhaven National Laboratory

Workshop Dates
June 7-12, 2015

Workshop Location
Stony Brook University
Stony Brook, NY 11794-3800 USA

Charles B. Wang Center
- Theatre and Theatre Lobby
- Lecture Hall 1 and 2

The Workshop Sponsor:

COMARK Communications

Exhibitors:

MITSUBISHI HEAVY INDUSTRIES, LTD.
Our Technologies, Your Tomorrow

radiabeam TECHNOLOGIES

Please visit the Exhibitor booths in the Theatre Lobby.

Lunch options

Lunch Options on Campus

SCGP Café in the Simons Center for Geometry and Physics

Breakfast Monday thru Friday 8:30am – 10:00am
Lunch Monday thru Friday 11:30am – 2:30pm

Student Activities Center

Breakfast, Lunch, Dinner
Monday thru Thursday 7:30am– 10:00 pm
Friday, 7:30am – 8:00pm

Lunch Options off Campus

Nicolls Plaza: (2.9 miles / 6 min. drive)

Directions: When leaving Stony Brook Univ. make a right onto Nicolls Road, Left on 347 at the light, and make the 1st right onto Pond Path.

Chili's Restaurant
Quiznos Sandwich
Stop & Shop Grocery Store
Starbucks Coffee

Smith Point Plaza: (3.3 miles / 6 min. drive)

Directions: When leaving Stony Brook Univ. make a right onto Nicolls Road, Right on 347 at the light.

Burger King
Kumo Japanese Steakhouse
Stephanie's Bistro
ProPortion Café
Lan Wo Restaurant
Greek To-Go
Jamba Juice
Tao's Bakery & Dim

From 347 (3.5 miles / 8 min. drive)

Directions: When leaving Stony Brook Univ. make a right onto Nicolls Road, Right onto 347 at the light.

Lake Grove Diner
Manhattan Pizza
Tudor Village Delicatessen
Red Tiger Dumpling House
Hoshi Sushi
Starbucks Coffee
Hess Gas Station

Off North Country Road: (1.4 miles / 4 min. drive)

Directions: (Driving) when leaving Stony Brook Univ. make a left onto Nicolls Road, Left onto North Country at the end of the road. (Walking .8 miles / 15 min. walk, walking across campus west)

7-Eleven
Jake Starr Restaurant & Bar
Domino's Pizza & Pasta (delivery available 631-751-0330)
Green Tea Restaurant
Dunkin Donuts
Bench Bar & Grill (Sports bar)
Green Cactus Fresh Mexican Grill
Ten89 Noodle House

Directions: When leaving Stony Brook Univ. make a Left onto Nicolls Road, Right onto North Country at the end of the road.

Subway
The Curry Club (Indian Cuisine)
Bliss (Upscale eatery)
Eastern Pavillion
East Coast Burrito Co.
BP Gas Station
Sushi Ichi Japanese Restaurant

BNL Tour

Tour Basics

- The tour of Brookhaven National Laboratory will start and end at Stony Brook University, Wang Center. Tour sign-up is available during ERL15 workshop registration while space is available.
- **Buses depart** at 8:30 a.m. (sharp) and return by 2:00 p.m.

Tour Tracks

- Two (2) tour tracks are available. Participants will be asked to select a track (Bus A or Bus B) at conference registration check-in. **Selections are made on a first-come, first-served basis**. Both buses are limited to 25 guests. See facility descriptions below.
- **Bus A**: ERL, ATF, NSLS-II | **Bus B**: ERL, SMD, NSLS-II

Important Notes

- **Guests must show an official photo ID** to enter BNL (e.g., driver's license, passport).
- **Guests must wear long pants and flat, closed-toe shoes**. Access may be restricted if proper attire is not worn.
- NSLS-II is posted a Controlled Area. As such, the Lab must issue guest TLDs (thermoluminescent dosimeters) for facility tours. Tour participants will be asked to complete the TLD Badge Sign-Out form at conference registration check-in. **Tour access at NSLS-II may be restricted if guests do not complete these forms in their entirety**.

Thank you!